METHOD OF HETEROGENOUS PURIFICATION USING A BIDENTATE CONJUGATE; LIQUID PHASE AND SOLID PHASE BIDENTATE LIGANDS, SEPARATION BY ELUTION, IMMOBILIZATION AND REGENERATION

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Abstract:
A novel heterogenous purification method is disclosed. The method removes a macromolecule from a liquid by allowing the macromolecule to undergo a specific binding affinity reaction with a bidentate conjugate. The method is carried out by immobilizing the bidentate conjugate on a solid phase, contacting the bidentate conjugate with the liquid comprising the macromolecule, and separating the immobilized bidentate conjugate from contact with the liquid, thereby removing the macromolecule from the liquid to obtain either purified macromolecule or a purified liquid.

Exemplary Claim:
D R A W I N G

1. A heterogenous purification method with a solid phase and a liquid phase, the method comprising the sequential steps of: (a) providing a bidentate conjugate comprising a first bidentate member attached to a second bidentate member through a spacer moiety wherein the spacer moiety comprises between about 16 atoms and about 22 atoms and the spacer moiety has a length between about 21 Å and about 29 Å, said first and second bidentate members being different small molecule ligands, each of the ligands being capable of specifically binding to their respective and different first and second macromolecular specific binding partners; (b) immobilizing said bidentate conjugate on a solid phase; (c) contacting the immobilized bidentate conjugate with a liquid phase comprising a first macromolecular specific binding partner capable of adhering in a specific binding affinity reaction to the bidentate conjugate; (d) separating the immobilized bidentate conjugate with the [illegible]molecular specific binding partner from contact with the liquid phase; (e) eluting from said bidentate conjugate a first macromolecular specific binding partner with a substantially undiminished biological activity as compared to the biological activity of the first macromolecular specific binding partner prior to adherence to the bidentate conjugate, thereby obtaining a purified first macromolecular binding partner; and (f) regenerating the solid phase to thereby render it reusable for the purification of additional first macromolecular binding partner.